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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,421	02/23/2004	Paul D. Verhagen	13222.01/YOD ITWO:0020--1	2564
7590	06/16/2005		EXAMINER	
Patrick S. Yoder FLETCHER YODER P.O. Box 692289 Houston, TX 77269-2289			LEUNG, PHILIP H	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

<b>Office Action Summary</b>	<b>Application No.</b> 10/784,421	<b>Applicant(s)</b> VERHAGEN, PAUL D.	
	<b>Examiner</b> Philip H. Leung	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 April 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 11-15 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11-15 and 20-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. The disclosure is objected to because of the following informalities: there is no description in the specification for the term "interface circuit" or "interface" which is one of the essential elements of the claimed invention. It is wished to make it clear that the sole reason that the objection was made was the term "interface" is not found in the specification. The objection may be overcome by amending the specification to include the term.

Appropriate correction is required.

2. The replacement sheets of the drawings filed 4-1-2005 are acceptable.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pacileo (5,185,513), in view of Gipp et al (US 5,449,234) or Muller (US 3,667,476) (all previously cited by the applicant).

Pacileo shows a controller for a heating system including a control circuit 10, a temperature sensor 14 and an interface circuit 16 to couple the temperature feedback device to the control device to control the power supply 22 (see Figures 1 and 2 and col. 4, line 22 – col. 6,

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line 25). Therefore, Pacileo shows every feature and structure as claimed except for the use of a capacitor to connected the conductors to ground. Gipp shows a temperature sensing system with a thermistor 502. It teaches to ground a terminal 706 of the thermistor 502 through a capacitor 708 to reduce interferences and noises (see Figures 7 and 8 and col. 6, line 34 – col. 7, line 38). Muller also shows a temperature sensing system using a temperature measuring circuit 38 with a part Q5 thereof connected to ground through a capacitor C4 to filter out unwanted noise (see Figure 1 and col. 6, lines 48- 65). It would have been obvious to an ordinary skill in the art to modify Pacileo to ground the terminals of the thermocouple to ground through a capacitor in order to reduce electrical noises for a more accurate temperature feedback control system, in view of the teaching of Gipp or Muller.

5. Claims 11-15 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmori et al (4,419,755) (newly cited), in view of Gipp et al (US 5,449,234) or Muller (US 3,667,476).

Ohmori shows an electronic device, comprising: an electronic circuit having an inductor (heating induction coil 8); and an interface (22) operable to electrically couple a signal representative of temperature (from detector 31) resulting from heating by the inductor (8) from a temperature feedback device to the electronic circuit (see the Figure and col. 2, line 55 – col. 3, line 55). Therefore, Ohmori shows every feature and structure as claimed except for the use of a capacitor to connected the conductors of the temperature sensor to the interface to ground. Gipp shows a temperature sensing system with a thermistor 502. It teaches to ground a terminal 706 of the thermistor 502 through a capacitor 708 to reduce interferences and noises (see Figures 7

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and 8 and col. 6, line 34 – col. 7, line 38). Muller also shows a temperature sensing system using a temperature measuring circuit 38 with a part Q5 thereof connected to ground through a capacitor C4 to filter out unwanted noise (see Figure 1 and col. 6, lines 48- 65). It would have been obvious to an ordinary skill in the art to modify Ohmori to ground the terminals of the thermocouple to ground through a capacitor in order to reduce electrical noises for a more accurate temperature feedback control system, in view of the teaching of Gipp or Muller.

6. Applicant's arguments filed 4-1-2005 have been fully considered but they are not persuasive in regard to claims 1-4. It is pointed out that claim 1 does not require a heating inductor as in the amended claims 11 and 20. All that is recited is a control circuit operable to control ..... to an induction heating cable. Clearly the heating control circuit of Pacileo can be applied to any electrical heaters including an inductor as the claim does not include any limitation to preclude such application. Anyway, the use of an interface in an induction heating device (as claimed in claims 11-15 and 20-23) for coupling the temperature sensing signals is old as shown by Ohmori. The use of a ground capacitor in a temperature sensing device to filter out noises is well known as shown in Gipp or Muller. To apply this well known teaching to any heating control circuit would have been obvious to an ordinary artisan with the references before him/her.

7. Applicant's arguments in regard to claims 11-15 and 20-23 have been considered but are moot in view of the new ground(s) of rejection.

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8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

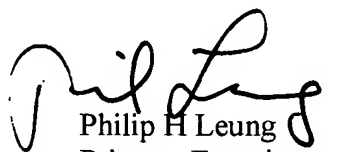
Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Philip H Leung  
Primary Examiner  
Art Unit 3742

P.Leung/pl  
6-12-2005